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Foresight: Processes and Results for Decision Making and Action

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Canada

Health Canada and invests in foresight to be:

- More forward looking and strategic
- More anticipatory of the opportunities and challenges associated with change
- Better positioned to incorporate this knowledge and make well informed, strategic decisions in the present

Strategic Significance of Foresight:

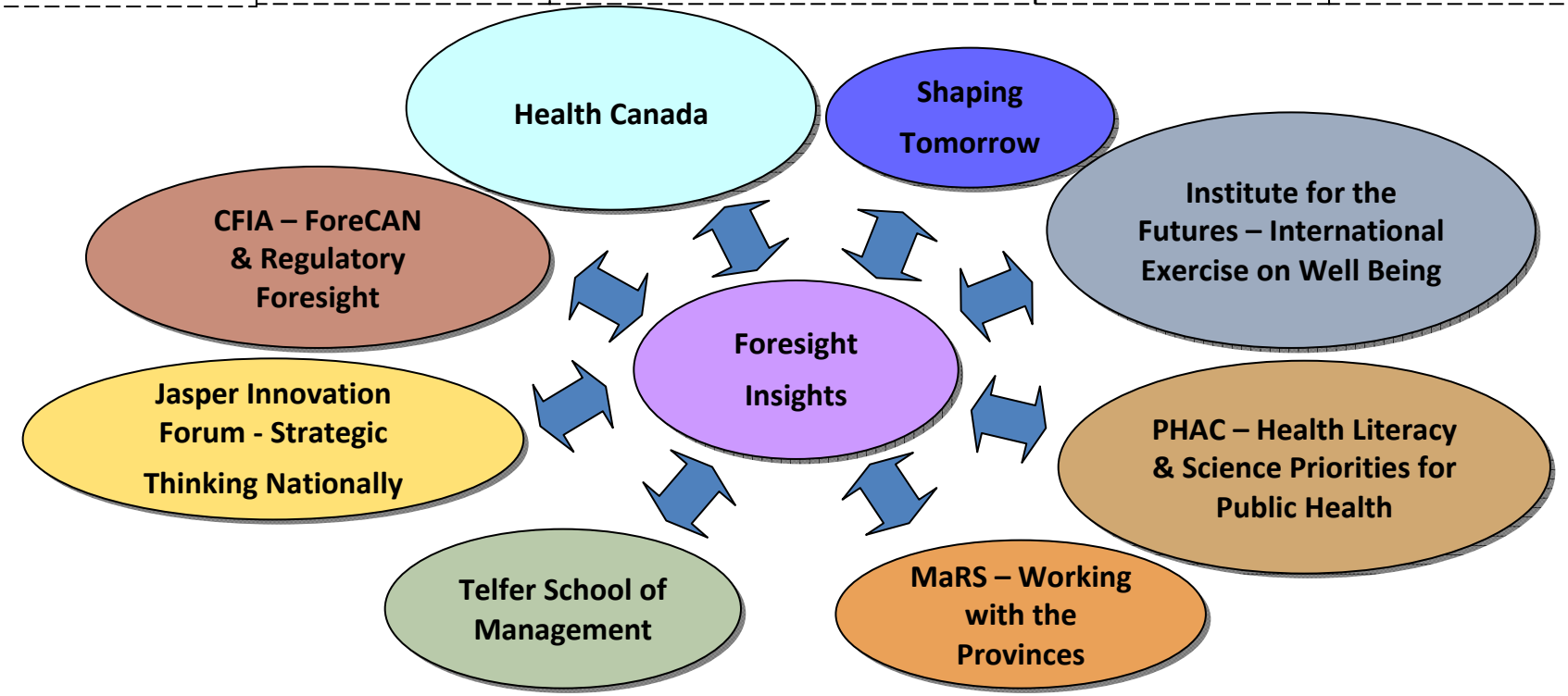
Concepts emerged from RAND – National Security Agency U.S.

- U.K. Foresight Office reports directly to the Government Chief Scientific Adviser and the Cabinet Office

Use foresight to garner insights to challenging questions and wicked problems to inform decision makers today

Collaborators in Foresight

Agreeing to objectives and seeking to achieve them	Sharing future intelligence and debating	Working collaboratively with national & international partners	Identifying opportunities and threats	Sharing common vision, mission, strategies and aims



Foresight Processes

Use of various tools to derive insights

- Trends and Drivers
- Appreciative Inquiry
- Environmental Scanning
- Cross-impact Analysis
- Challenge Dialogue
- Scenarios
- Delphi
- System Mapping
- Causal Layer Analysis
- Solution Based Problem Solving Algorithms
- Morphological Analysis
- Contradiction Oriented Innovation

Health Canada's Foresight Process

Use of various tools to derive insights

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Health Canada's Trends and Drivers Process

Scenarios

Health Canada's Scenario Process

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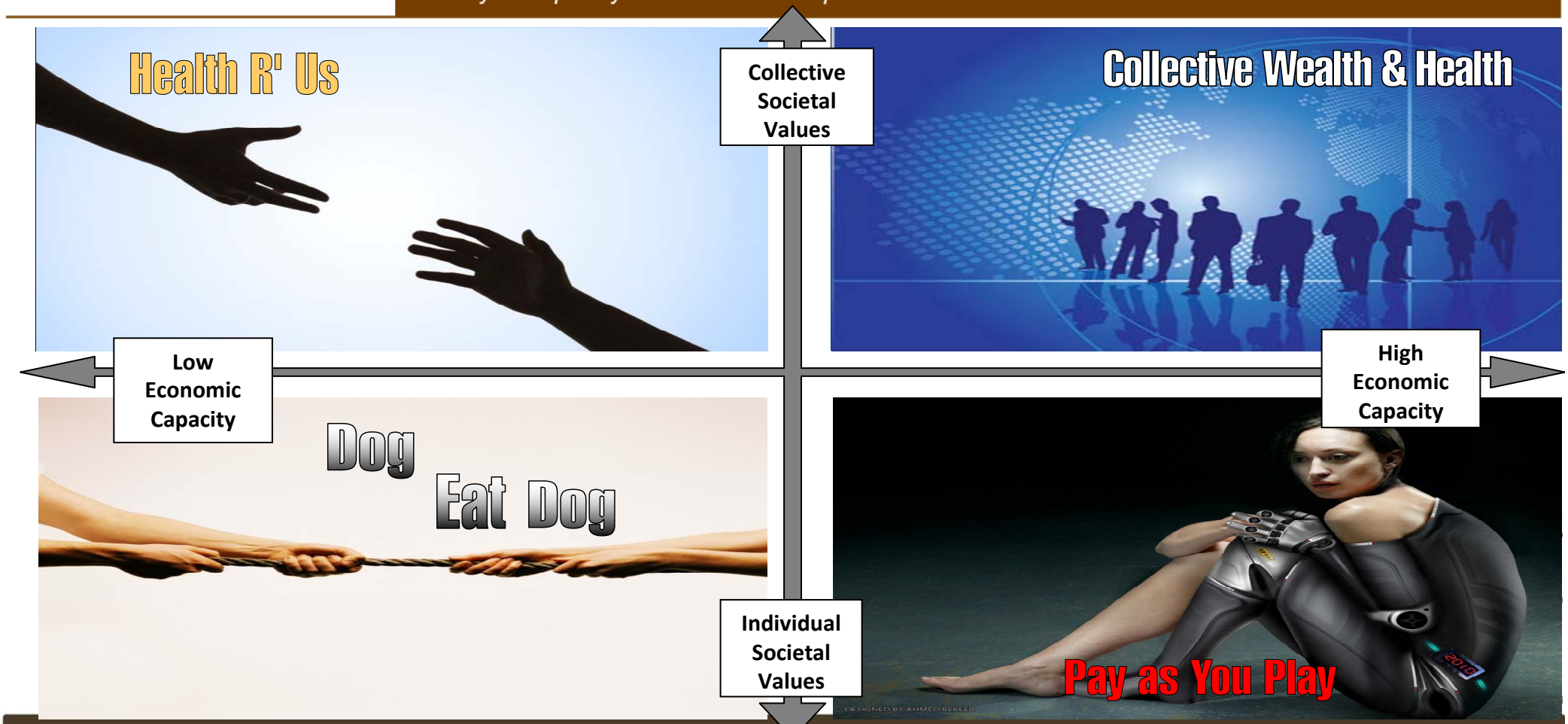

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Health Canada's Environmental Scanning Process

8 Key Insights

1. Holistic & Life Systems Management
2. Mobilize Individuals
3. Collective Well-Being
4. Networks, Engagement & Experimentation
5. Better Decision Making
6. Communicate for Better Outcomes
7. Health Access to Options
8. Foster Innovation Through Information Sharing

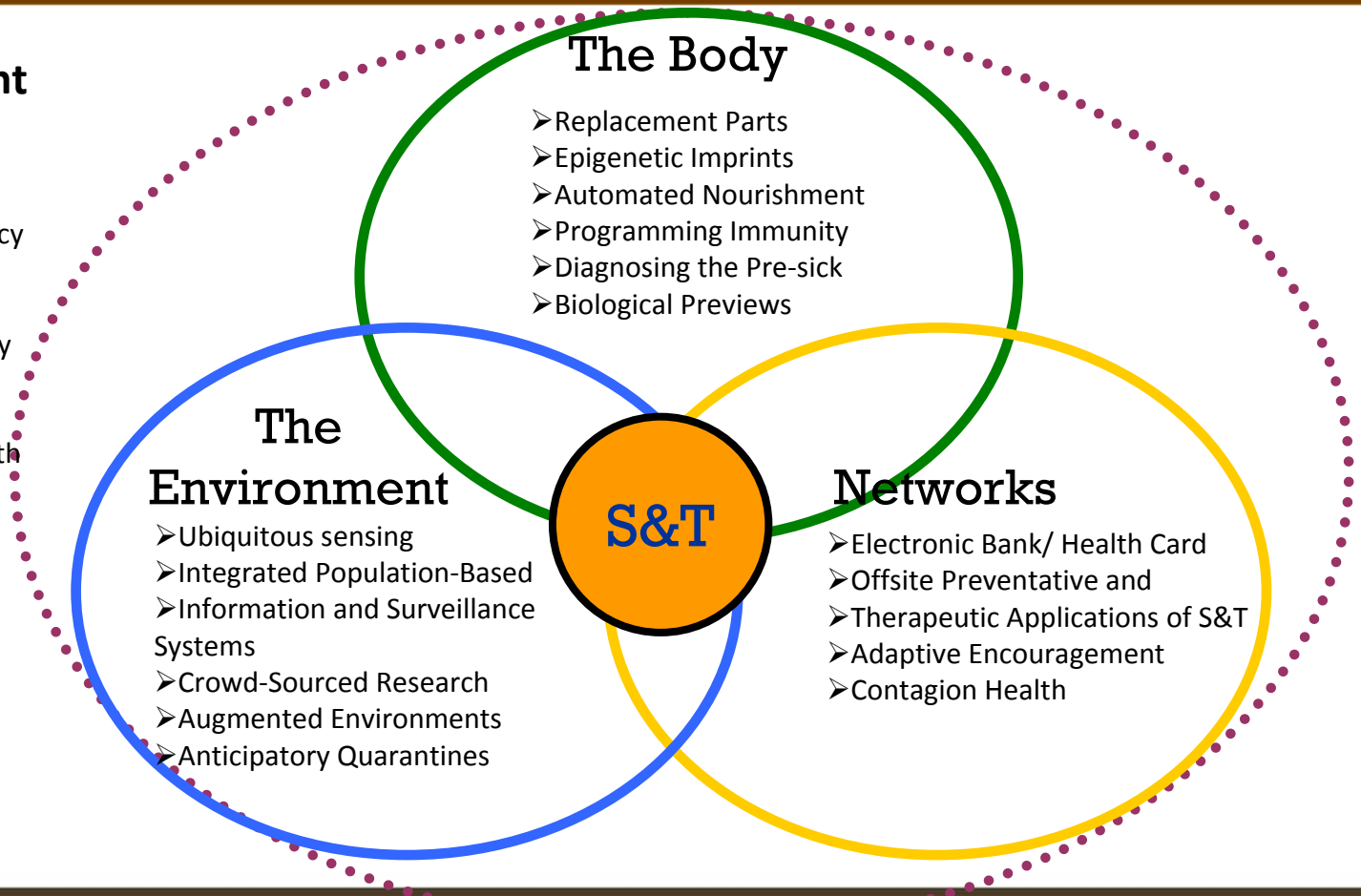
Emergent Technologies and Actions Identified

- Ubiquitous sensing
- Food & Food Policy
- Electronic Bank/ Health Card
- Reform Regulatory Process
- Offsite Preventative and Therapeutic Applications of S&T
- Health Impact assessment in Federal policy making
- Solution Based Open Innovation
- Leveraging existing technology for healthy active aging
- Standards for Medical Information
- Transparency and Detailing Costs of Health Transactions
- Integrated Population-Based Information and Surveillance Systems
- Crowd-Sourced Research
- Augmented Environments
- Epigenetic Imprints
- Anticipatory Quarantines
- Automated Nourishment
- Programming Immunity
- Replacement Parts
- Diagnosing the Pre-sick Adaptive Encouragement
- Contagion Health
- Measuring the Subjective
- Biological Previews

Categorization of Emergent S&T

Enabling Environment

- Food & Food Policy
- Reform Regulatory Process
- Health Impact assessment in Federal policy making
- Solution Based Open Innovation
- Leveraging existing technology for healthy active aging
- Standards for Medical Information
- Transparency and Detailing Costs of Health Transactions
- Measuring the Subjective



Solution Based Problem Solving Algorithms

Health Canada's Three Emergent Areas

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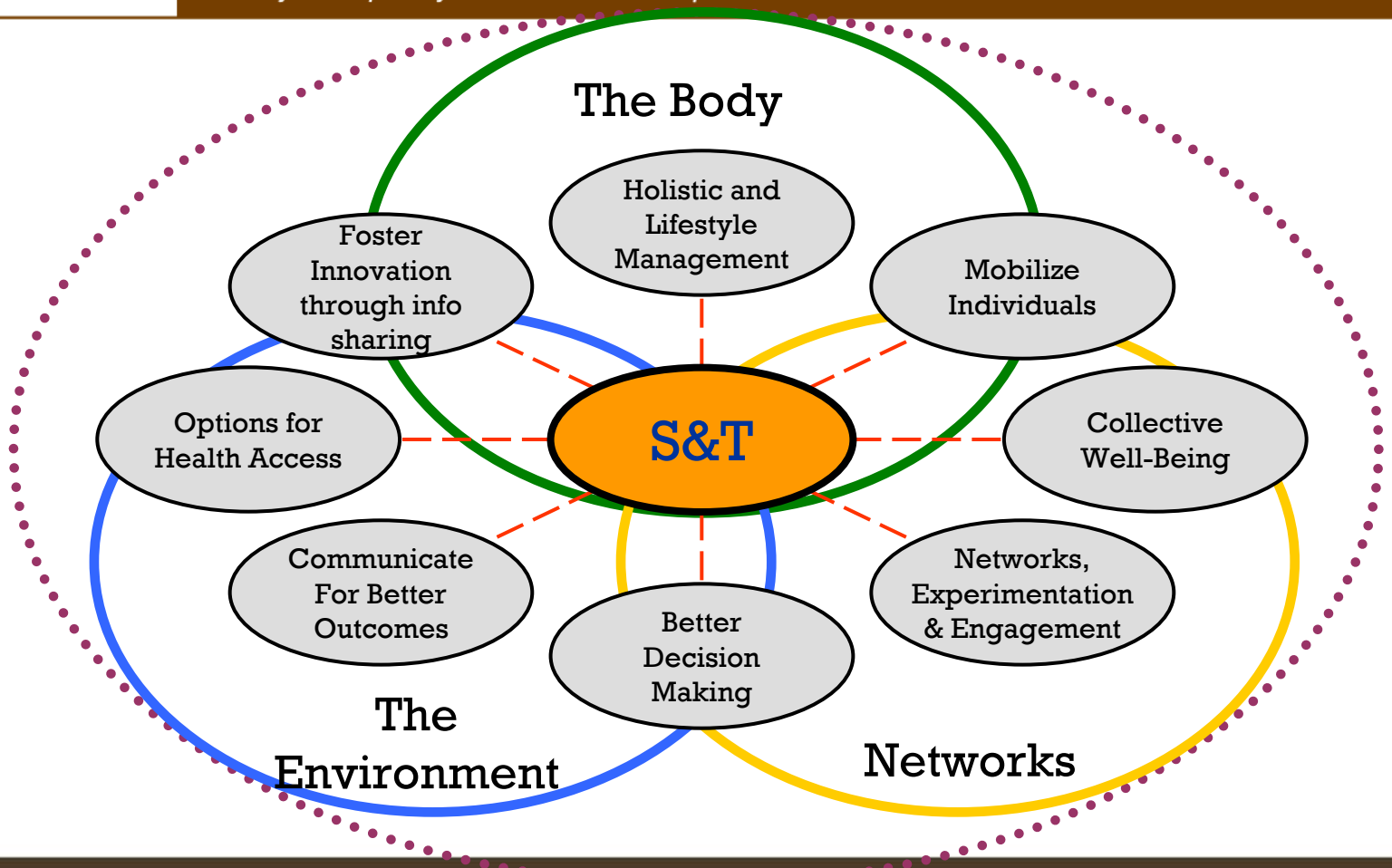
Enabling Environment



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Solution Based Problem Solving Algorithms

Application of Energy

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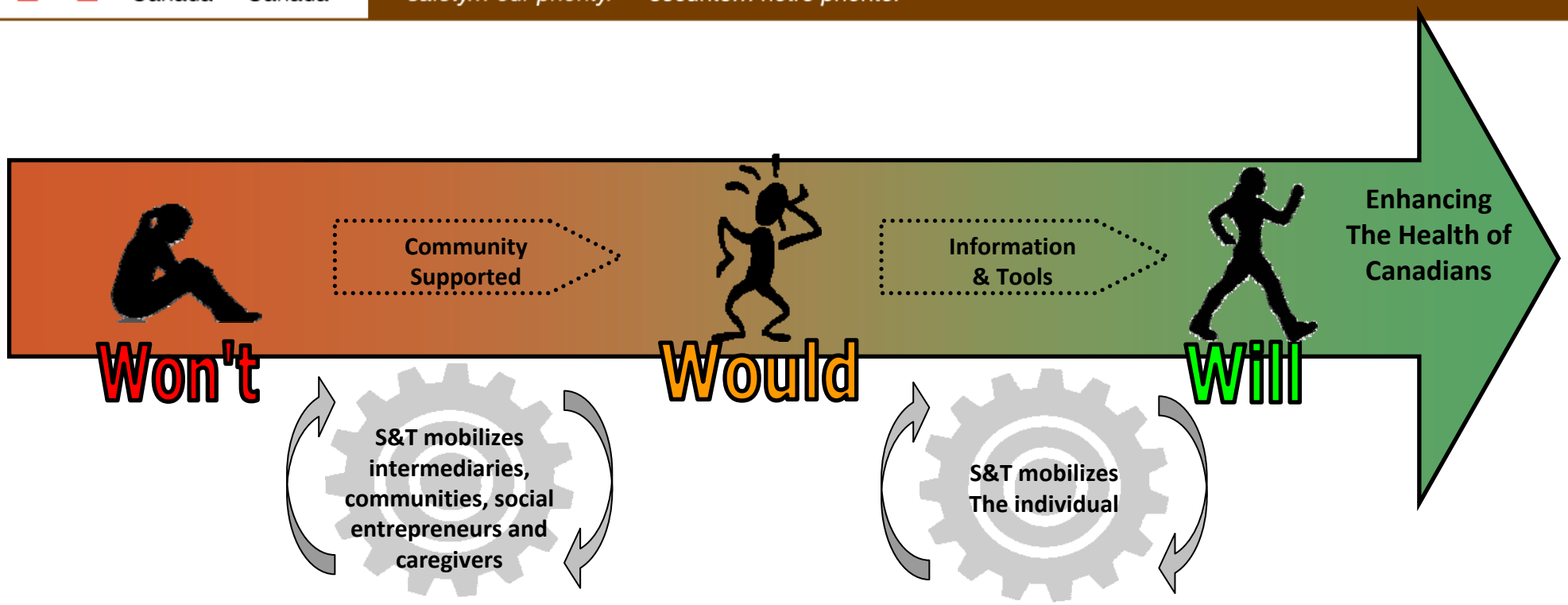

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Solution Based Problem Solving Algorithms

Health Canada's Health Conveyor

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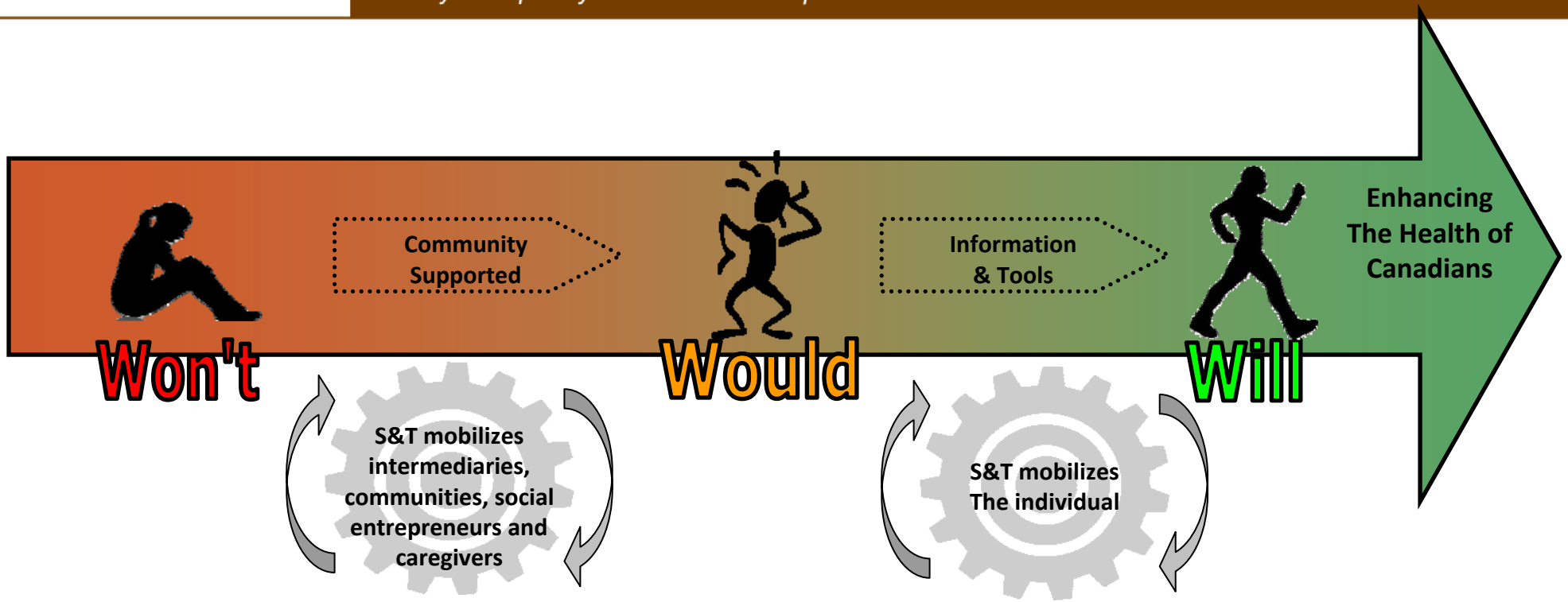

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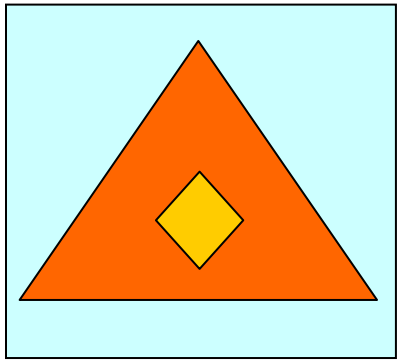
So What Did Foresight Tell Us?

- Gave us a better understanding of complex problems
- Realization that our world is changing
- Realization that how we make decisions is fundamentally changing

There is a new framework and changing set of assumptions for decision makers

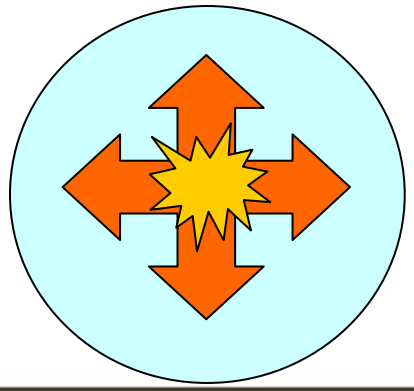
Changing Assumptions-The Way We View the World

Traditional



World Views	Approach to Health	S&T
•More linear •Reductionist •Problem approach	•Hierarchical •Dr. is expert •Limited Options	•One of a kind •In institutions •Assist the masses

Evolving



World Views	Approach to Health	S&T
•Complex •Holistic •System approach	•Individual role •Health literacy •Many options	•Widespread •Quickly evolving •Personalized

Contradiction Oriented Innovation

Changing Assumptions-Role of Government and Others

Traditional

Public Science/Policy

Private Science/ Policy

Evolving

Public Science/Policy

Corporate Social Responsibility

Private Science/ Policy

Contradiction Oriented Innovation

Changing Assumptions- Public and Private

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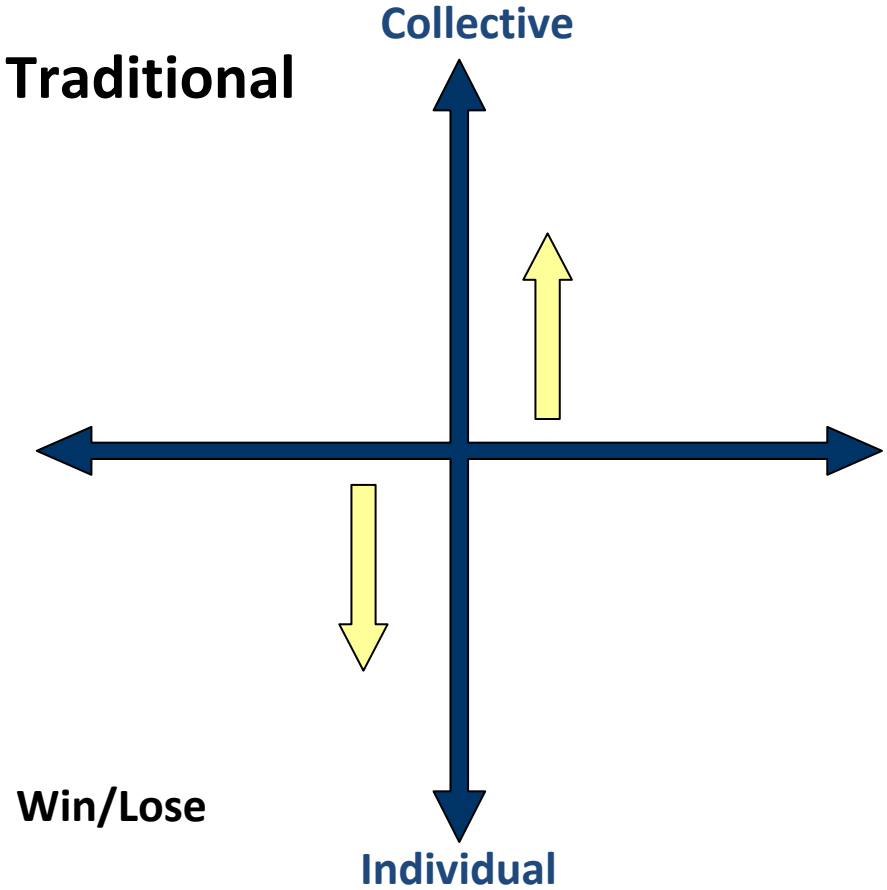

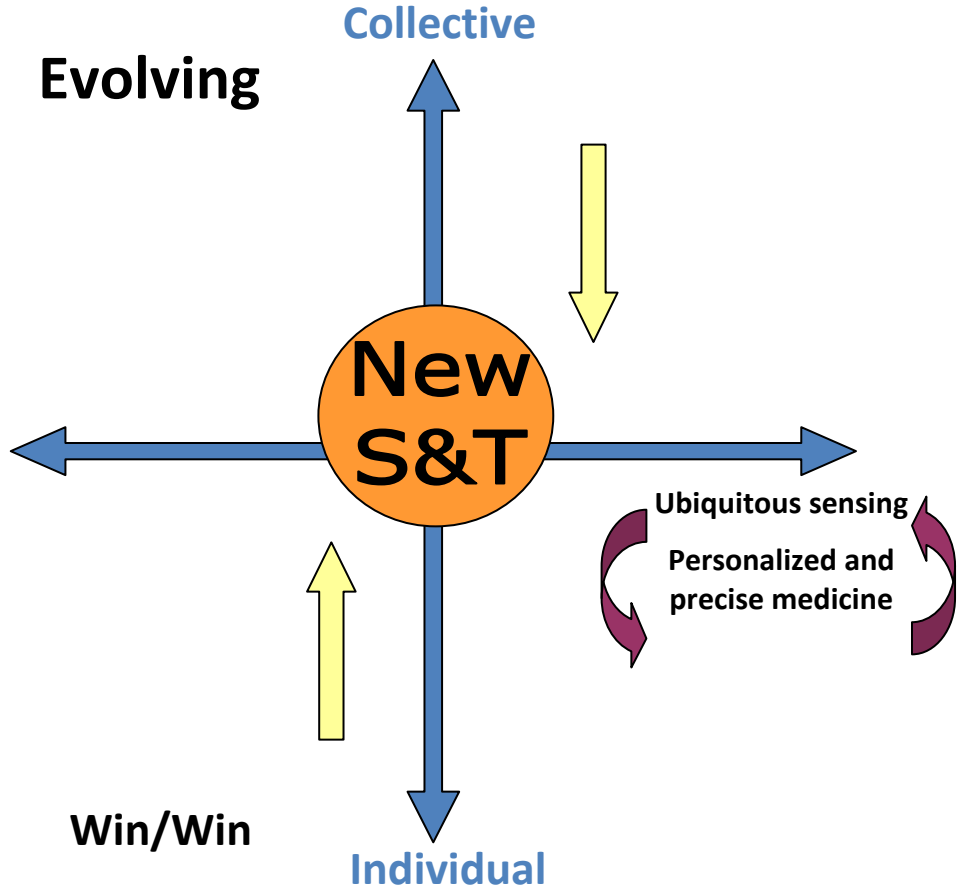

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Contradiction Oriented Innovation

Changing Assumptions- The System

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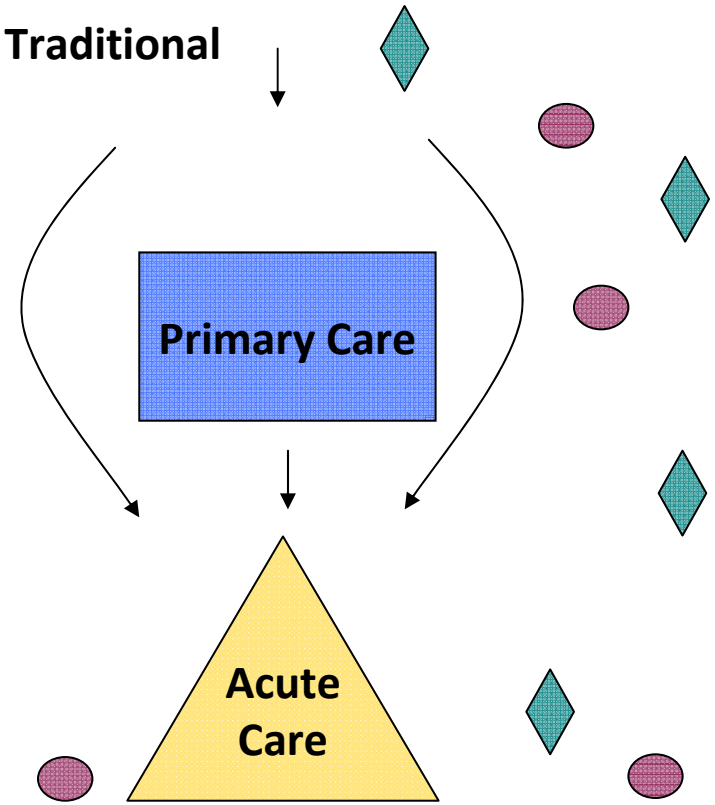

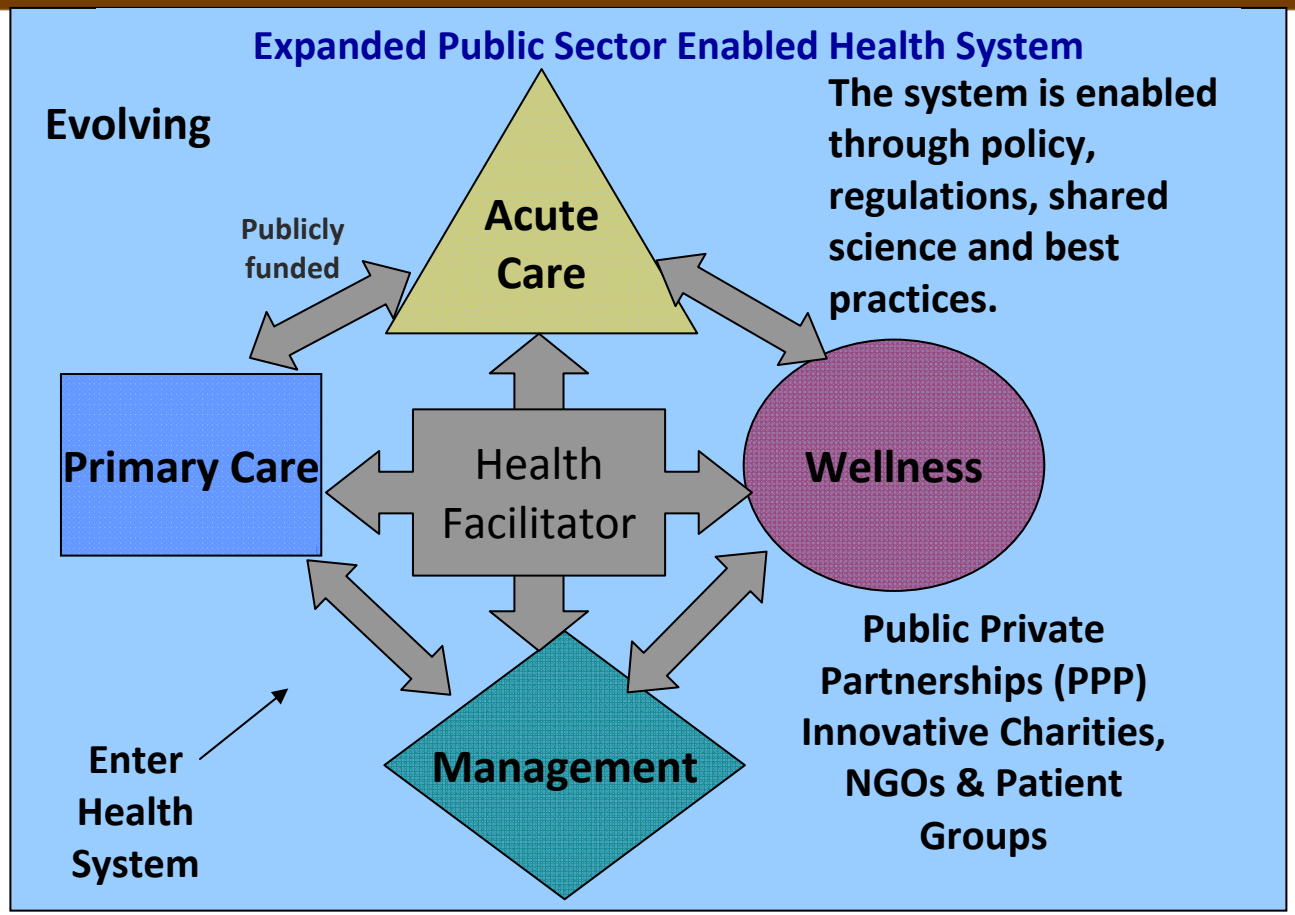

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How Does Emergent S&T Help Us Build This Expanded System?

S&T

Ubiquitous Sensing

Electronic Platform

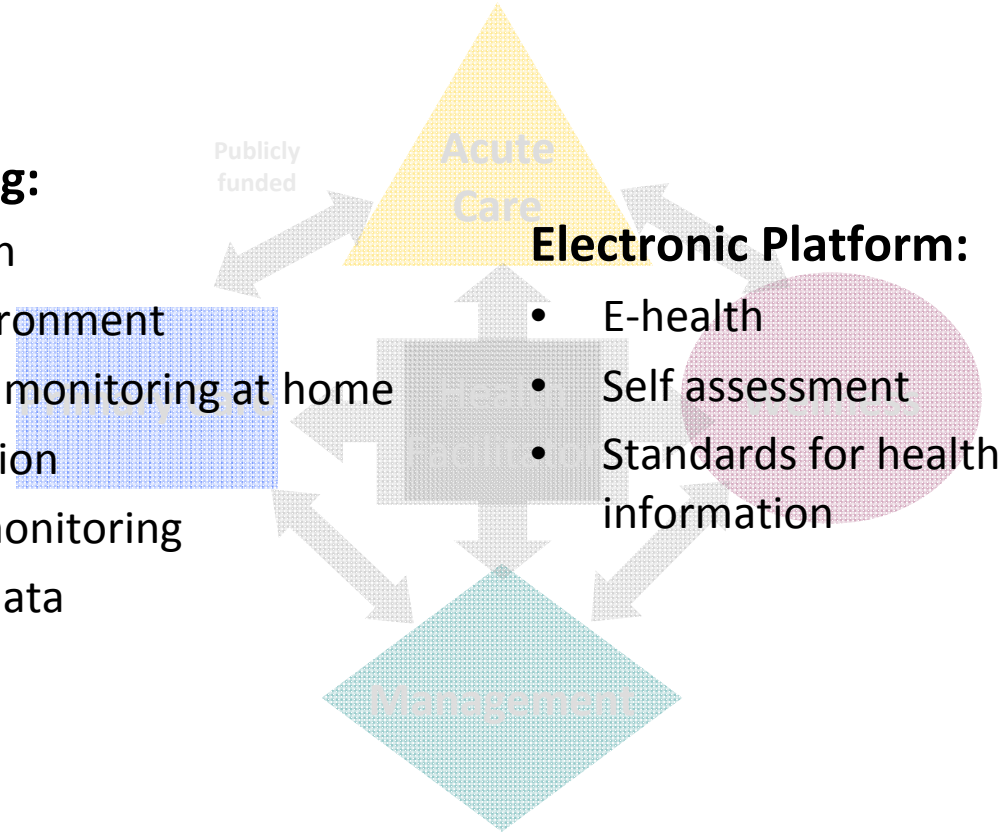
Regulatory and Policy Framework for Innovation

Health Communication Platform

The System is enabled through policy, regulations, shared science, and best practices

Expanded Public Sector Enabled Health System

S&T



Ubiquitous Sensing:

- Data visualization
- Augmented environment
- Surveillance and monitoring at home
- Systems integration
- Offsite patient monitoring
- Crowd sourced data

Electronic Platform:

- E-health
- Self assessment
- Standards for health and medical information

Expanded Public Sector Enabled Health System

S&T

Regulatory & Policy Framework for Policy Innovation:

- Mainstreaming health in government policies
- Impact assessment
- Solution based innovation
- Transparency of cost
- Internalization of cost

Health Communication Platform:

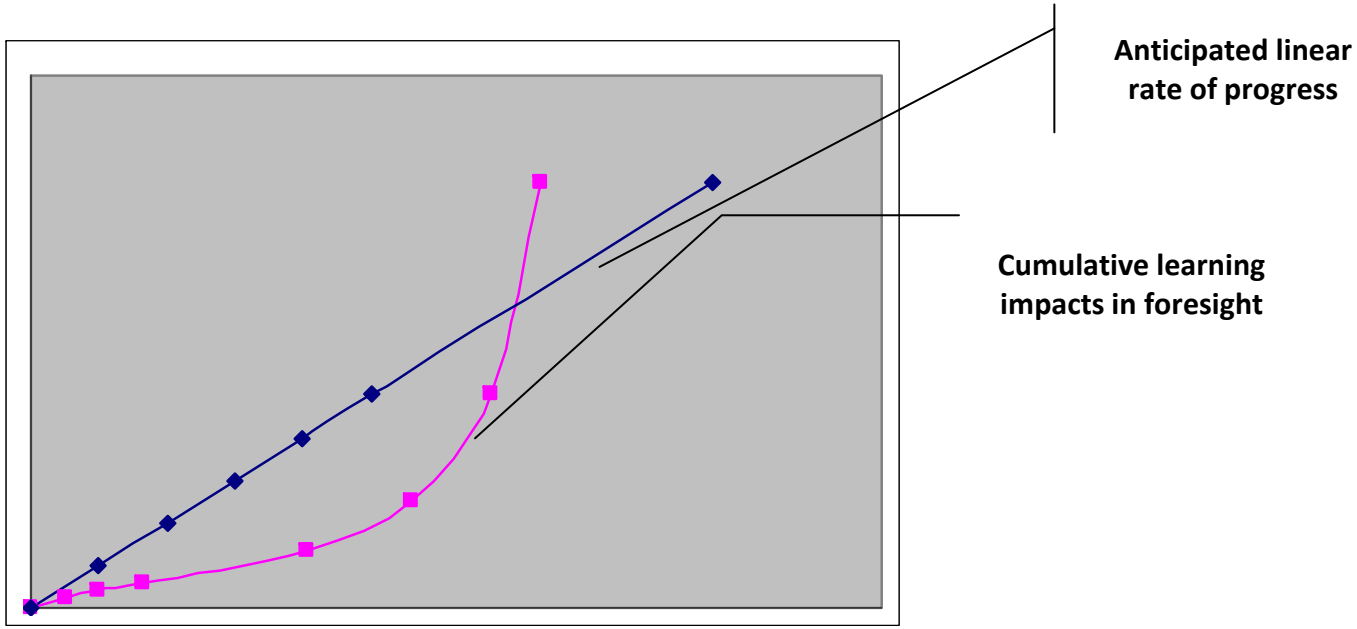
- More internet based information, and tools
- Self-assessment
- Participatory action
- Dr.Oz

What Does This Mean for the Science Side of Health Canada?

- Expanded Definition of Science (system, cognitive, ICT, wellness)
- Enhance the communications of science for results
- Ubiquitous sensing – infrastructure, standards, etc
- New corporate models
- Adopting frameworks inclusive of dialectics
- Talent management
- Lifestyle Management Approach

Changing Assumptions-Foresight Insights Rise Exponentially

Payson Usher's Theory of Cumulative Synthesis



Next Steps

Processes:

- Publish findings
- Series of presentations
- Collaborations with other government agencies, knowledge groups and global partners (McGill, FDA, CSIS, Mars, IFTF, etc)

Our role:

- Expanded Definition of Science
- Enhance the communications of science for results
- Ubiquitous sensing
- New corporate models
- Adopting frameworks inclusive of dialectics
- Talent management
- Lifestyle Management Approach

What Does This Mean for Decision Makers?

Foresight enables:

- A new way of strategizing under complexity and uncertainty
- Role of the Government of Canada and the private sector converging- Partners, convenors and facilitators
- Forum for stakeholders to co-create
- Complex adaptive management
- Forum for collaboration under common guidelines and principles
- Proactive governance structure
- Horizontality and coordination of science and policy

Thank You

Comments / Questions / Suggestions?

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